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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,920

01/09/2006

Michael R Smith

0837RF-H547-US

9046

38441

7590

04/28/2009

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EXAMINER

BURCH, MELODY M

ART UNIT

PAPER NUMBER

3657

MAIL DATE

DELIVERY MODE

04/28/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,920	Applicant(s) SMITH ET AL.	
	Examiner Melody M. Burch	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2006 and 25 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 4-6, 11, 12, 24, 31, 33-37, 40 and 42-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-10, 13-23, 25-30, 32, 38, 39 and 41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/25/06, 8/25/06, 10/10/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species 16 Group I in the reply filed on 9/23/08 and 1/16/09, respectively, is acknowledged.
2. Claims 4-6, 11, 12, 24, 31, 33-37, 40, and 42-44 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/23/08 and 1/16/09.

Claim Objections

3. Claims 8, 18, and 41 objected to because of the following informalities:
 - The following phrases lack proper antecedent basis in the claim:
 - o "the wall" in line 2 of claim 8;
 - o "the action" in line 2 of claim 18;
 - o "the vibrating body" in the last line of claim 41.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1, 15-18, and 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 1. The phrase "within housing" in line 3 is indefinite. It is unclear to the Examiner whether the housing recited in line 3 is intended to be the same or different from that recited in line 2. Examiner recommends --the housing-- or --said housing-- if that is Applicant's intent.

Re: claim 18. The phrase "a piston" in line 2 is indefinite. It is unclear to the Examiner whether the piston recited in line 2 is intended to be the same or different from that recited in line 3 of claim 10.

Claim element "means associated with the second tuning port for providing an additional degree of freedom" in claims 15 and 21 is a means (or step) plus function limitation that invokes 35 U.S.C. 112, sixth paragraph. However, the written description fails to clearly link or associate the disclosed structure, material, or acts to the claimed function such that one of ordinary skill in the art would recognize what structure, material, or acts perform the claimed function. The specification fails to provide a clear link to set forth which structure represents the means associated with the tuning port for providing an additional degree of freedom.

Applicant is required to:

(a) Amend the claim so that the claim limitation will no longer be a means (or step) plus function limitation under 35 U.S.C. 112, sixth paragraph; or

(b) Amend the written description of the specification such that it clearly links or associates the corresponding structure, material, or acts to the claimed function without introducing any new matter (35 U.S.C. 132(a)); or

(c) State on the record where the corresponding structure, material, or acts are set forth in the written description of the specification that perform the claimed function. For more information, see 37 CFR 1.75(d) and MPEP §§ 608.01(o) and 2181.

The remaining claims are rejected due to their dependency from a rejected claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

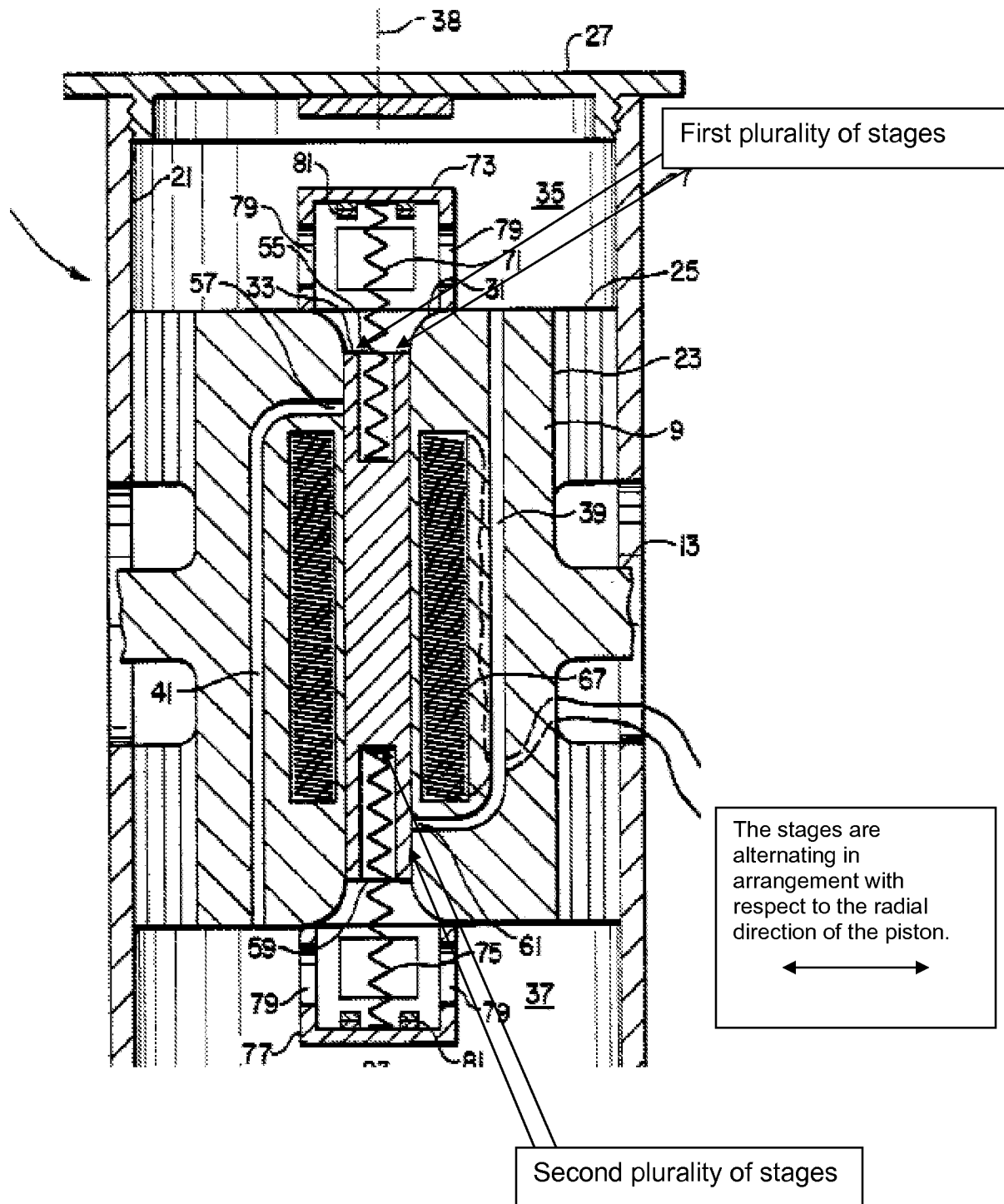
7. Claims 1-3, 7, 25, 27, 28, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5439082 to McKeown et al.

Re: claims 1-3 and 41. McKeown et al. show in figure 4 a vibration isolator comprising a housing 7,27,29, a piston resiliently disposed within housing, the piston being adapted for connection to a first body, a first fluid chamber 35 and a second fluid chamber 37 defined by the housing and the piston, a tuning port 31 placing the first fluid chamber and the second fluid chamber in fluid communication, a tuning mass or fluid and element 33 disposed within the tuning port, and at least one actuator 67, 69 coupled to the piston for selectively transferring forces to the piston.

Re: claim 7. McKeown et al. show in figure 4 the tuning port being exterior to a portion 27 of the housing to the same extent that the tuning port 1419 is exterior to a portion 1431 of the housing of the instant invention.

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Re: claims 25, 27, and 28. McKeown et al. show in figure 4 a vibration isolator comprising: a housing 7, 27, 29, a first piston 9 (this is the second piston in the rejection of claim 28) resiliently disposed within the housing, the first piston being adapted for connection to a vibrating body, a second multistage piston 33 (this is the first piston in the rejection of claim 28) resiliently disposed within the housing by way of its connection to resiliently disposed first piston 9, the second multistage piston being configured to define a plurality of stages in fluid communication with a first fluid chamber, and a second plurality of stages in fluid communication with a second fluid chamber as labeled, at least one actuator 67,69 coupled to the second multistage piston for selectively transferring forces to the second multistage piston, a first fluid chamber 35 and a second fluid chamber 37, each being defined by the housing, the first piston, and the second multistage piston, at least one tuning port 31 in fluid communication with both the first fluid chamber and the second fluid chamber and a tuning fluid disposed within the first fluid chamber, the second fluid chamber, and the tuning port. See next page.



Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. in view of EP-0537927 (EP'927).

McKeown et al. are silent with regards to the tuning port being integrated into the wall of the housing.

EP'927 teaches in figure 1 a vibration isolator including a tuning port 22 that is integrated into the wall of a housing 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified a tuning port of McKeown et al. to have been a tuning port that is integrated into the wall of the housing, in view of the teachings of EP'927, in order to provide an alternate, well-known means of placing the first and second fluid chambers in communication with each other and means for varying the degree of isolation.

10. Claims 9, 26, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. in view of US Patent 5906254 to Schmidt et al.

McKeown et al. are silent with regards to the actuator being a piezoelectric actuator.

Schmidt et al. teach in col. 8 lines 49-53 a vibration isolator replacing the use of a magnetically actuated actuator to exert force on a floating mass with a piezoelectric actuator.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the magnetically actuated actuator of McKeown et al., to have included a piezoelectric actuator, as taught by Schmidt et al., in order to provide a functionally equivalent means of exerting a force on the floating mass.

11. Claims 10, 13, 15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. in view of US Patent 5458222 to Pla et al.

Re: claims 10 and 19. McKeown et al. show in figure 4 a vibration isolator comprising: a housing 7, 27, 29, a first piston 9 resiliently disposed within the housing, the first piston being adapted for connection to a vibrating body, a second piston 33 resiliently disposed within the housing by way of its connection to resiliently disposed first piston 9, at least one actuator 67,69 coupled to the second piston for selectively transferring forces to the second piston, a first fluid chamber 35 and a second fluid chamber 37, each being defined by the housing, the first piston, and the second piston, a tuning port 31 in fluid communication with both the first fluid chamber and the second fluid chamber and a tuning fluid disposed within the first fluid chamber, the second fluid chamber, and the tuning port.

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McKeown et al. are silent with regards to the actuator being a piezoceramic actuator.

Pla et al. teach an active vibration control unit employing a piezoceramic actuator 22.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the actuator of McKeown et al. to have included a piezoceramic actuator, as taught by Pla et al., in order to provide a functionally equivalent means of exerting a force on the floating mass.

Re: claim 13. McKeown et al., as modified, teach in figure 4 of McKeown et al. the limitation wherein the tuning port is exterior to portion 27 of the housing to the same extent that the tuning port 1419 is exterior to a portion 1431 of the housing of the instant invention.

Re: claims 15, 17, and 18. In an alternate interpretation of McKeown et al. the at least one tuning port in fluid communication with both the first and second fluid chambers is element 39 and the isolator further comprises: a second tuning port 31 in fluid communication with both the first and second fluid chambers, a means 33, 71, 75 associated with the second tuning port for providing an additional degree of freedom wherein vibrations at two different frequencies are isolated.

Re: claim 20. McKeown et al. show in figure 4 a base portion 29 adapted for connection to a first body, a housing 7, 27, a tuning mass 33 resiliently carried within the housing by way of resiliently carried element 9, at least one actuator 67, 69 disposed

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between the base portion and the housing for selectively transferring forces to the housing.

McKeown et al. are silent with regards to the actuator being a piezoceramic actuator.

Pla et al. teach an active vibration control unit employing a piezoceramic actuator 22.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the actuator of McKeown et al. to have included a piezoceramic actuator, as taught by Pla et al., in order to provide a functionally equivalent means of exerting a force on the floating mass.

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. in view of US Patent 5458222 to Pla et al. as applied to claim 10 above, and further in view of EP'927.

McKeown et al., as modified, are silent with regards to the tuning port being integrated into the wall of the housing.

EP'927 teaches in figure 1 a vibration isolator including a tuning port 22 that is integrated into the wall of a housing 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified a tuning port of McKeown et al., as modified, to have been a tuning port that is integrated into the wall of the housing, in view of the teachings of EP'927, in order to provide an alternate, well-known means of placing the

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first and second fluid chambers in communication with each other and means for varying the degree of isolation.

13. Claims 16, 21-23, 29, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKeown et al. in view of US Patent 5458222 to Pla et al. as applied to claim 10 above, and further in view of US Patent 5520375 to Leibach et al.

Re: claims 16 and 21-23. McKeown et al., as modified, are silent with regards to the vibrations being harmonic.

Leibach et al. teach in col. 5 line 65 – col. 6 line 2 the use of a vibration canceler allowing the isolation of harmonic vibrations.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the vibrations of McKeown et al., as modified, to have been harmonic, in view of the teachings of Leibach et al., in order to provide a means of eliminating imbalance associated with vibrations of a rotating device. See the rejections of claims 10, 15, 17, and 18 with respect to claims 21, 22, and 23.

Re: claims 29, 30, and 32. See the rejection of claim 10, but McKeown et al. are silent with regards to the vibration isolator being used with respect to a rotating machinery.

Leibach et al. teach in col. 6 lines 1-2 the use of a vibration isolator used with respect to a rotating machinery.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the vibration isolator of McKeown et al., as

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modified, to have been utilized with respect to a rotating machinery, as taught by Leibach et al., in order to provide a means of preventing imbalance.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents: 6217011 to Redinger and 5704596 to Smith teach the use of vibration isolation systems.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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April 26, 2009

/Melody M. Burch/

Primary Examiner, Art Unit 3657